Joins

The purpose of this exercise is to practice using joins to combine data from multiple tables in a single query result using Structured Query Language (SQL).

Learning Objectives

After completing this exercise, students will understand:

- How to interpret database diagrams to determine how tables are related.
- How to use SQL `JOIN` clauses to combine data from multiple tables in a database query.
- The difference between `INNER` AND `OUTER` joins and when to use one or the other.
- The difference between a `LEFT` and `RIGHT` join.

Evaluation Criteria & Functional Requirements

- All of the queries run as expected.
- The number of results returned from your query is equal to the number of results specified in each question.
- Code is clean, concise, and readable.

To complete this exercise, you need to write SQL queries in the `joins-exercises.sql` file. Below each commented out question, you'll write the query necessary to answer the question being asked using the world database as the source.

Getting Started

- Open the `joins-exercises.sql` file in DB Visualizer.
- If you have not done so already, create the world database. The script for this should be available in yesterday's lecture code.
- In the "Database Connection" properties above the file, select the world database.
- You can run all of the database commands in the file at one time by pressing the command + enter key at the same time.
- You can run a single database command at a time by highlighting the command and then pressing the command + enter key at the same time.

Tips and Tricks

- The results of an `INNER JOIN` between tables A and B consist of the intersection of A and B. That is, only the records that exist in both tables based on the `JOIN` condition are returned.
- The results of an `OUTER JOIN` between tables A and B are all of the records that exist in the `LEFT` table (A) and any matches that exist on the `RIGHT`.
- You can specify which table (`LEFT` or `RIGHT`) all of the results should be returned from explicitly.
- See the PostgreSQL documentation for more information on how table joins work in PostgreSQL.
- Some people find value in using Venn diagrams to understand and explain SQL joins, while others argue that this is wrong and join diagrams are easier to understand. Which one is the correct way to

explain table joins? The way that makes the most sense to you is the correct way. Try taking a look at both explanations to determine which one is best for your understanding.
